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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,975	10/07/2003	Joachim Laurenz Naimer	UNI1773-007	4775
33717	7590	05/24/2006	EXAMINER	
GREENBERG TRAUERIG LLP			TRAN, DALENA	
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SANTA MONICA, CA 90404			ART UNIT	PAPER NUMBER
			3661	

DATE MAILED: 05/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/679,975	NAIMER ET AL.	
	Examiner	Art Unit	
	Dalena Tran	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-13,15-21 and 27-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-13,15-21,27-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant(s)

1. This office action is responsive to the amendment filed on 3/7/06. Claims 1-7, 9-13, 15-21, 23-25, and 27-32 are pending.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5, 9-10, and 16-17, are rejected under 35 U.S.C. 102(e) as being anticipated by Staggs et al. (6,685,541).

As per claim 1, Staggs et al. disclose an electronic display for presenting data from a vertical speed source aboard an aircraft, wherein display comprises: a fractional section of an arcuate vertical speed indicator scale (see columns 7-8, lines 62-2), a vertical speed indicator marker (see column 7, line 60), wherein fractional section has non-linear graduations marked thereon in the vicinity of vertical speed indicator marker (see figure 1).

As per claim 5, Staggs et al. disclose vertical speed indicator marker is comprised of a pointer (see column 7, line 61).

As per claims 9-10, Staggs et al. disclose fractional section of vertical speed indicator scale always shows an indicia for a value of zero vertical speed, and vertical

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speed indicator marker is comprised of a digital readout of the vertical speed of aircraft (see columns 6-7, lines 52-33).

As per claims 16-17, Staggs et al. disclose a vertical speed bug having a shaped indicator in a position inside of fractional section of vertical speed indicator scale, wherein vertical speed bug indicates a selected vertical speed value, and vertical speed bug points to a location on fractional section of vertical speed indicator scale equivalent to selected vertical speed value (see column 13, lines 8-56).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2, is rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541) in view of Etherington (5,844,504).

As per claim 2, Staggs et al. do not disclose an elliptically shaped. However, it would have been obvious to one of ordinary skill in the art that elliptically shaped is just a portion of an arcuate shaped. Also, it is well known in the art that vertical speed indicator scale (VSI) is one of the indicator scales in the primary flight display in the cockpit of an aircraft, which also included an altimeter indicator, and an airspeed indicator. To modify for other shaped in the primary flight display in the cockpit of an aircraft, Etherington discloses that avionics display engineers have attempted to enhance the display of information to pilots, so to enhance the pilot's efficiencies, such as to modify the difference shapes of indicator scales, for example, from a basic configurations

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vertically oriented display scale, and a circular shape to an arcuate shape display of indicator scales as Etherington disclose in column 1, lines 10-45; column 2, lines 9-14; and column 4, lines 18-36. Etherington also disclose a portion of an arcuate shaped in figure 3, this shaped would have been obvious represents an elliptically shaped.

Therefore, it would have been obvious to modify the teach of Staggs et al. by modify a VSI display scale to an elliptically shaped to enhance the pilot's efficiencies.

It would have been obvious that elliptical is a modification between an arcuate and circular shape because when the arc in the vertical position, it represent an elliptically shaped. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al. by combining vertical speed indicator scale is elliptically shaped to provide to the pilot a different view of information display in the scale display, so the pilot can adjust his or her perception to monitoring the orientation, heading, or the altitude of his own aircraft and also compare with other aircrafts.

6. Claims 3, 6-7, and 11, are rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541) in view of Gordon et al. (6,686,851).

As per claim 3, Staggs et al., do not disclose vertical speed indicator marker shows a vertical speed trend. However, Gordon et al. disclose vertical speed indicator marker shows a vertical speed trend (see columns 5-6, lines 41-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al., by combining vertical speed indicator marker shows a vertical speed trend to help the pilot continue to observe an altitude and position information in

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order for the pilot decide to monitor or adjust a current speed or altitude for increasing a safety for the aircraft.

As per claims 6-7, Staggs et al. disclose vertical speed indicator marker is comprised of a pointer (see column 7, line 60). Staggs et al. do not disclose a numeric display. However, Gordon et al. disclose a numeric display (see columns 5-6, lines 41-10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al., by combining a numeric display for indicate the present vertical speed to the pilot.

As per claim 11, Staggs et al. do not disclose the vertical speed is bounded by the range of +-9999 FPM. However, Gordon et al. disclose a scale range of 9500 feet to 11000 feet (see columns 3-4, lines 60-42). Therefore, it is obvious that 9999 feet is included in (9500-11000 ft range), also it is well known that a vertical speed scale can be designed to include vary different ranges to indicate a higher speed display value for the aircraft when the aircraft is in the higher rate of altitude. It would have been obvious to one of ordinary skill in the art at the time the invention to implement the system of Staggs et al. by combining vertical speed is bounded by the range of +-9999 FPM to enhance a pilot's awareness of a maximum altitude levels, therefore to alert the pilot to an unsafe or unintended flight patterns.

6. Claim 4, is rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541) in view of McElreath et al. (6,154,151).

As per claim 4, Staggs et al. do not disclose vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument.

However, McElreath et al. disclose vertical speed indicator marker shows a vertical speed

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trend by its motion to replicate the motion of an analog instrument (see columns 6-7, lines 46-8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al. by combining vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument to continuous update vertical speed indicator for viewing by the pilot.

7. Claims 20-21, and 23, are rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541) in view of Etherington (5,844,504), Gordon et al. (6,686,851), and Gralnick (4,914,733).

As per claim 20, Staggs et al. disclose an electronic display for presenting data from a vertical speed source aboard an aircraft, wherein display comprises: a fractional section of a vertical speed indicator scale (see columns 7-8, lines 63-4), a vertical speed indicator marker showing a vertical speed of the aircraft as indicated by the vertical speed source, wherein vertical speed indicator marker comprises a pointer (see columns 7-8, lines 58-4), wherein fractional section of a vertical speed indicator scale shown by electronic display will change relative to the vertical speed depicted by vertical speed indicator marker (see figure 1). Staggs et al. do not disclose vertical speed indicator marker comprises a digital numeric display. However, Gordon et al. disclose vertical speed indicator marker comprises a digital numeric display (see columns 5-6, lines 42-65). Staggs et al. do not disclose fractional section of a vertical speed indicator scale will change relative to the vertical speed. However, Gralnick discloses fractional section of a vertical speed indicator scale shown by electronic display will change relative to the vertical speed depicted by vertical speed indicator marker (see columns 5-6, lines 56-63).

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Staggs et al. do not disclose an elliptically shaped. However, it would have been obvious to one of ordinary skill in the art that elliptically shaped is just a portion of an arcuate shaped. Also, it is well known in the art that vertical speed indicator scale (VSI) is one of the indicator scales in the primary flight display in the cockpit of an aircraft, which also included an altimeter indicator, and an airspeed indicator. To modify for other shaped in the primary flight display in the cockpit of an aircraft, Etherington discloses that avionics display engineers have attempted to enhance the display of information to pilots, so to enhance the pilot's efficiencies, such as to modify the difference shapes of indicator scales, for example, from a basic configurations vertically oriented display scale, and a circular shape to an arcuate shape display of indicator scales as Etherington disclose in column 1, lines 10-45; column 2, lines 9-14; and column 4, lines 18-36. Etherington also disclose a portion of an arcuate shaped in figure 3, this shaped would have been obvious represents an elliptically shaped.

Therefore, it would have been obvious to modify the teach of Staggs et al. by modify a VSI display scale to an elliptically shaped to enhance the pilot's efficiencies.

It would have been obvious that elliptical is a modification between an arcuate and circular shape because when the arc in the vertical position, it represent an elliptically shaped. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al. by combining vertical speed indicator scale is elliptically shaped to provide to the pilot a different view of information display in the scale display, so the pilot can adjust his or her perception to monitoring the orientation, heading, or the altitude of his own aircraft and also compare with other aircrafts.

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As per claim 21, Staggs et al. disclose vertical speed indicator marker is shown equidistant between an upper and lower value on fractional section of vertical speed scale (see columns 6-7, lines 53-33).

As per claim 23, Staggs et al. do not disclose the vertical speed is bounded by the range of +-9999 FPM. However, Gordon et al. disclose a scale range of 9500 feet to 11000 feet (see columns 3-4, lines 60-42). Therefore, it is obvious that 9999 feet is included in (9500-11000 ft range), also it is well known that a vertical speed scale can be designed to include vary different ranges to indicate a higher speed display value for the aircraft when the aircraft is in the higher rate of altitude. It would have been obvious to one of ordinary skill in the art at the time the invention to implement the system of Staggs et al. by combining vertical speed is bounded by the range of +-9999 FPM to enhance a pilot's awareness of a maximum altitude levels, therefore to alert the pilot to an unsafe or unintended flight patterns.

8. Claims 12, 15, 24, and 27, are rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541), Etherington (5,844,504), Gordon et al. (6,686,851), and Gralnick (4,914,733) as applied to claims 1, and 20 above, and further in view of McElreath et al. (6,154,151).

As per claims 12, and 24, Staggs et al., Etherington, Gordon et al., and Gralnick do not disclose TCAS resolution advisory along a periphery of vertical speed indicator scale. However, McElreath et al. disclose TCAS resolution advisory indicators along a periphery of vertical speed indicator scale wherein TCAS resolution advisory indicators are shown during a TCAS resolution advisory condition (see the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to

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modify the teach of Staggs et al., Etherington, Gordon et al., and Gralnick by combining TCAS resolution advisory to alert pilot about potentially hazardous aircraft targets in the area to avoid collision and assure safety to the aircraft.

As per claims 15, and 27, McElreath et al. also disclose TCAS resolution advisory indicators are comprised of red marks and green marks (see at least columns 6-7, lines 46-34).

9. Claims 13, and 25, are rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541), Etherington (5,844,504), Gordon et al. (6,686,851), Gralnick (4,914,733), and McElreath et al. (6,154,151) as applied to claims 12, and 24 above, and further in view of Feyereisen et al. (US 2003/0132860 A1).

As per claims 13, and 25, Staggs et al., Etherington, Gordon et al., Gralnick, and McElreath et al. do not disclose TCAS resolution advisory condition triggers an increase in size of electronic display. However, Feyereisen et al. disclose TCAS resolution advisory condition triggers an increase in size of electronic display (see [0063] through [0068]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al., Etherington, Gordon et al., Gralnick, and McElreath et al. by combining TCAS resolution advisory condition triggers an increase in size of electronic display to emphasize to the pilot the level of emergency and dangerous level so the pilot can determine an appropriate action to prevent collision to increase safety.

10. Claims 18-19, and 32, are rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541), in view of Fisher (5,739,771), and Feyereisen et al. (US 2003/0132860 A1).

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As per claims 18-19, Staggs et al. do not disclose vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale. However, Fisher disclose vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale when selected vertical speed value is outside the range of values shown by fractional section of vertical speed indicator scale (see the abstract; columns 2-3, lines 45-40; and columns 4-5, lines 30-46). Staggs et al. also do not disclose shaped indicator of vertical speed bug changes. However, Feyereisen et al. disclose shaped indicator of vertical speed bug changes to provide a visual cue, and it is obvious that the shape can change to different rate of its original shape (see [0063] through [0067]; and [0112] through [0116]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al. by combining vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale when selected vertical speed value is outside the range of values shown by fractional section of vertical speed indicator scale to indicate to the operator of an aircraft that a set-point of an indicator is outside of the predetermined range, so the operator can interpret flight path and respond to displayed information quickly and accurately to ensure safety of the aircraft. Also, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al. by combining shaped indicator of vertical speed bug changes to different rate of its original shape for providing attention to the pilot depend on the level of warning.

As per claim 32, Staggs et al. disclose an electronic display for presenting data from a vertical speed source aboard an aircraft to a flight crew, comprising: a depiction of

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at least a fractional section of a vertical speed indicator scale having graduations of vertical speed depicted thereon (see columns 7-8, lines 62-2), and a depiction of a vertical speed indicator marker (see column 7, line 60). Staggs et al. do not disclose vertical speed indicator marker adjust dynamically to changing flight conditions to increase situational awareness of the flight crew. However, Feyereisen et al. disclose wherein the depictions of at least one of the vertical speed indicator scale and the vertical speed indicator marker adjust dynamically to changing flight conditions to increase situational awareness of the flight crew (see [0014]; [0063] through [0068]; and [0071] through [0075]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al. by combining the vertical speed indicator marker adjust dynamically to changing flight conditions to increase situational awareness of the flight crew to emphasize to the pilot the level of emergency and dangerous level so the pilot can determine an appropriate action to prevent collision to increase safety.

11. Claims 28-31, are rejected under 35 U.S.C.103(a) as being unpatentable over Staggs et al. (6,685,541), Etherington (5,844,504), Gordon et al. (6,686,851), and Gralnick (4,914,733) as applied to claim 20 above, and further in view of Fisher (5,739,771).

As per claims 28-29, Staggs et al., Etherington, and Gordon et al., do not disclose vertical speed indicator marker is shown parked at the edge of fractional section of vertical speed scale. However, Fisher discloses vertical speed indicator marker is shown parked at the edge of fractional section of vertical speed scale (see the abstract; columns 2-3, lines 45-40; and columns 4-5, lines 30-46). Fisher does not disclose a range of

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vertical speed is +/- 6000fpm. However, it is well known in the art that a maximum indicia of a vertical speed scale range can be up to +/- 6000fpm as disclose in Gralnick (column 6, lines 23-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Staggs et al., Etherington, and Gordon et al. by combining vertical speed indicator marker is shown parked at the edge of fractional section of vertical speed scale when vertical speed source indicate (for example +/- 6000fpm) to indicate to the operator of an aircraft that a set-point of an indicator is outside of the predetermined range, so the operator can interpret flight path and respond to displayed information quickly and accurately to ensure safety for the aircraft.

As per claim 30, Gordon et al. disclose a scale range of 9500 feet to 11000 feet (see columns 3-4, lines 60-42). Therefore, it is obvious that 9999 feet is included in (9500-11000 ft range), also it is well known that a vertical speed scale can be designed to include vary different ranges to indicate a higher speed display value for the aircraft when the aircraft is in the higher rate of altitude. It would have been obvious to one of ordinary skill in the art at the time the invention to implement the system of Gordon et al. by combining vertical speed is bounded by the range of +/-9999 FPM to enhance a pilot's awareness of a maximum altitude levels, therefore to alert the pilot to an unsafe or unintended flight patterns.

As per claim 31, Etherington discloses fractional section of vertical speed scale shows an indicium for zero fpm (see column 3, lines 18-36).

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Remarks

12. Applicant's argument filed on 3/7/06 has been fully considered. The new ground of rejection as above.

Maris (US 2004/0113816 A1) reference is not used in this rejection anymore.

There is no new reference in this rejection. The rejection has been modified as above.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 571-272-6968.

The examiner can normally be reached on M-F 6:30 AM-4:00 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 571-272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner
Dalena Tran



May 11, 2006